State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

Michael O. Leavitt
Governor
Kathleen Clarke
Executive Director
Lowell P. Braxton
Division Director

1594 West North Temple, Suite 1210
PO Box 145801
Salt Lake City, Utah 84114-5801
801-538-5340
801-359-3940 (Fax)
801-538-7223 (TDD)

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TO: Minerals File

FROM: Paul Baker, Reclamation Biologist

RE: Site Inspection, Magnesium Corporation of America, Rowley Plant, M/045/008, Tooele County, Utah

Date of Inspection: December 26, 2001
Time of Inspection: 10:00 AM to 12:00 PM
Conditions: Foggy, 20's, about four inches of snow on the ground
Participants: Tom Tripp, MagCorp; Doug Jensen, Tom Munson, and Paul Baker, DOGM

Purpose of Inspection:

The purpose of the inspection was for the Division staff to become more familiar with the site. Also because the reclamation bond for this site is presently due for the required five-year escalation, inspection of the oolitic sand mining areas was needed. The oolitic sand mining disturbances are the only portion of this site presently covered by a reclamation bond.

Getting to the site:

Take the Rowley/Skull Valley exit from I-80. Stay on the north side of the freeway and head west for about seven miles then north for about eight miles. There are signs pointing the direction.

Observations:

General comments about the area

From the plant site, we drove east along a dike road to Badger Island, back to the plant, then north to some claims on public lands. Most of the natural terrain is flat, and the dominant species in many of the undisturbed areas was greasewood. There are probably other areas with shadscale or sagebrush communities.

Oolitic sands

The operator has mined oolitic sands in areas to the east and to the north of the plant. The majority of the oolitic sand disturbed areas to the east of the plant are on the south side of the road. Some of the areas are hummocky and will require some grading (Photo 1), but there are areas where little or no regrading work is needed to have the site blend with surrounding areas (Photo 2). Some vegetation, including tamarisk, has reestablished naturally in the disturbed areas (Photo 3).

The oolitic sand mining operations to the north of the plant are the more recent disturbances. The operator has attempted to grade these areas as operations proceeded, although there are some areas that will still need to be graded (Photos 4 and 5). Mr. Tripp said that none of the mining disturbances had been seeded. The dominant species in the disturbed areas appeared to be Russian thistle and halogeton. With the exception of an area to the north of the plant, all the disturbances have occurred on private ground. Because there are no accurate maps of the mining areas, we were unable to ascertain the extent of the disturbances that have occurred on public land. The Division has requested that the operator submit updated maps of the site.

Dikes and canals near the Great Salt Lake

On the north side of the Badger Island dike road, directly opposite the oolitic sands mining area, is a large waste water evaporation pond (Photo 6). Continuing east, the road goes over a dike separating the Great Salt Lake on the north from other ponds on the south. Mr. Tripp explained that, as the dike road goes to Badger Island, it connects several sand bars. He showed us the area where the lake washed out a portion of the dike in 1986 (Photo 7). This dike failure resulted in a flood which rendered the Rowley site solar evaporation ponds useless for five to six years. Along this road, there are canals, headgates, pumps, and dikes used to control the flow of water from the Great Salt Lake into the solar evaporation ponds (Photos 8 and 9). The main supply canal and pumping station on this dike is also used to supply water to a salt company's solar operation in addition to supplying water for MagCorp's operation.

Waste

North and west of the plant site is a large waste storage area (Photo 10). Because we only drove through this area, it was impossible to tell exactly how large it was, but documents in the Division's files indicate it is approximately 80 acres. This area consists largely of end-dumped piles of magnesium oxide which is a waste stream from the production of magnesium at the plant. Interworld Resources, Inc., has proposed to reprocess this waste material to extract lithium carbonate and other materials. According to Mr. Tripp, if this operation is successful, it could reduce the waste bulk by approximately 70 percent.

Conclusions and Recommendations:

The Division needs accurate maps showing the extent of all disturbances and facilities at the site. It also needs figures showing the number of acres that have been disturbed and regraded as a result of the oolitic sand operations. This coming spring and summer, the Division should work with the operator to determine whether some of the regraded areas can be released and where additional reclamation work may need to be done.

cc: Forestry, Fire and State Lands

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Photo 1. Oolitic sands area east of the plant.

Photo 2. Oolitic sands area east of the plant.

Photo 3. Tamarisk in oolitic sands area east of the plant.

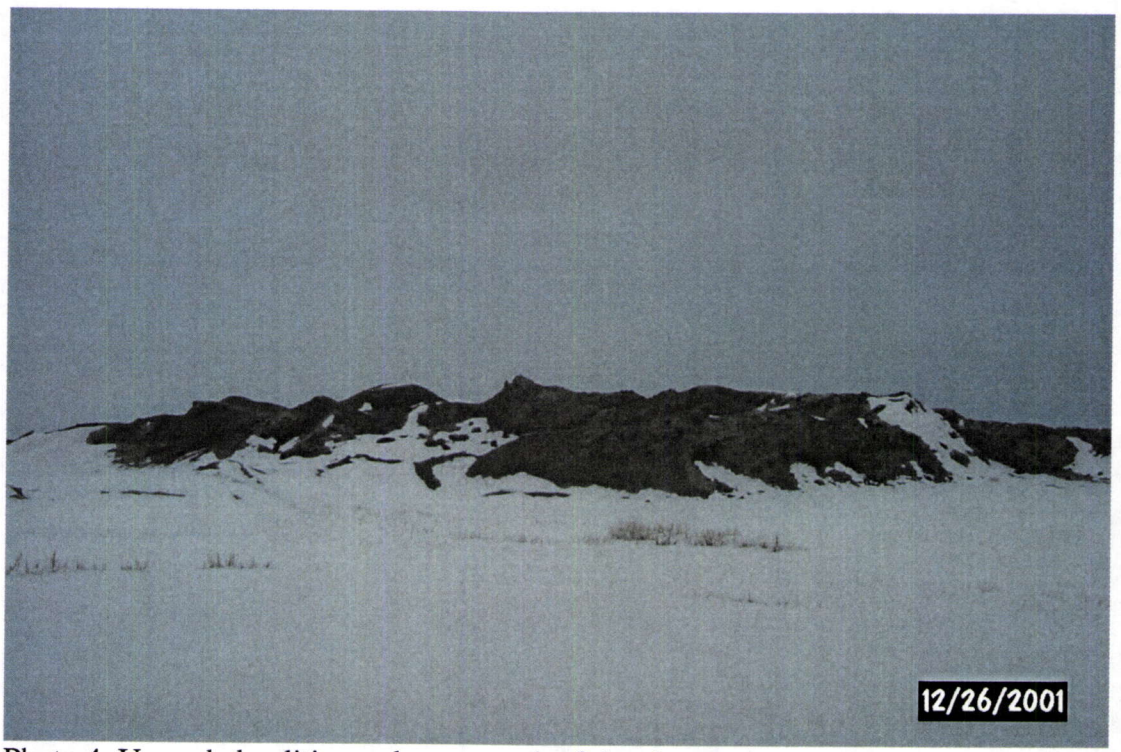

Photo 4. Ungraded oolitic sands area north of the plant.

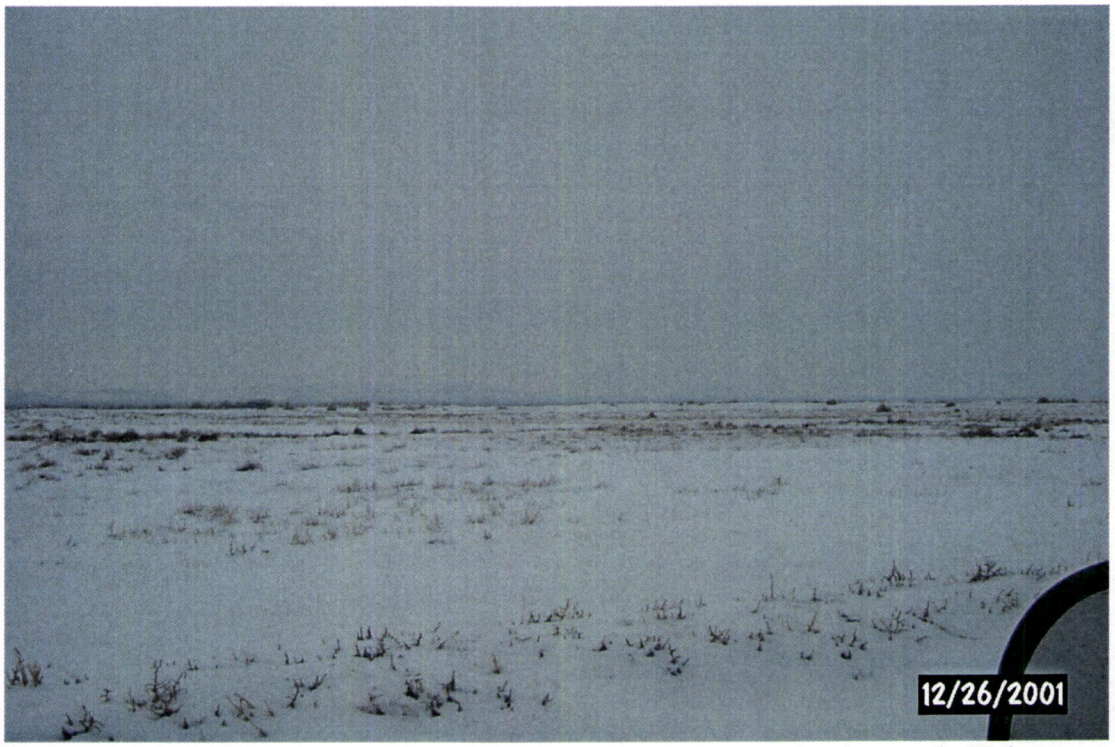

Photo 5. Graded oolitic sands area north of the plant. Vegetation is mostly Halogeton and Russian thistle.

Photo 6. Waste water pond east of the plant.

Photo 7. Area where the dike broke in 1986.

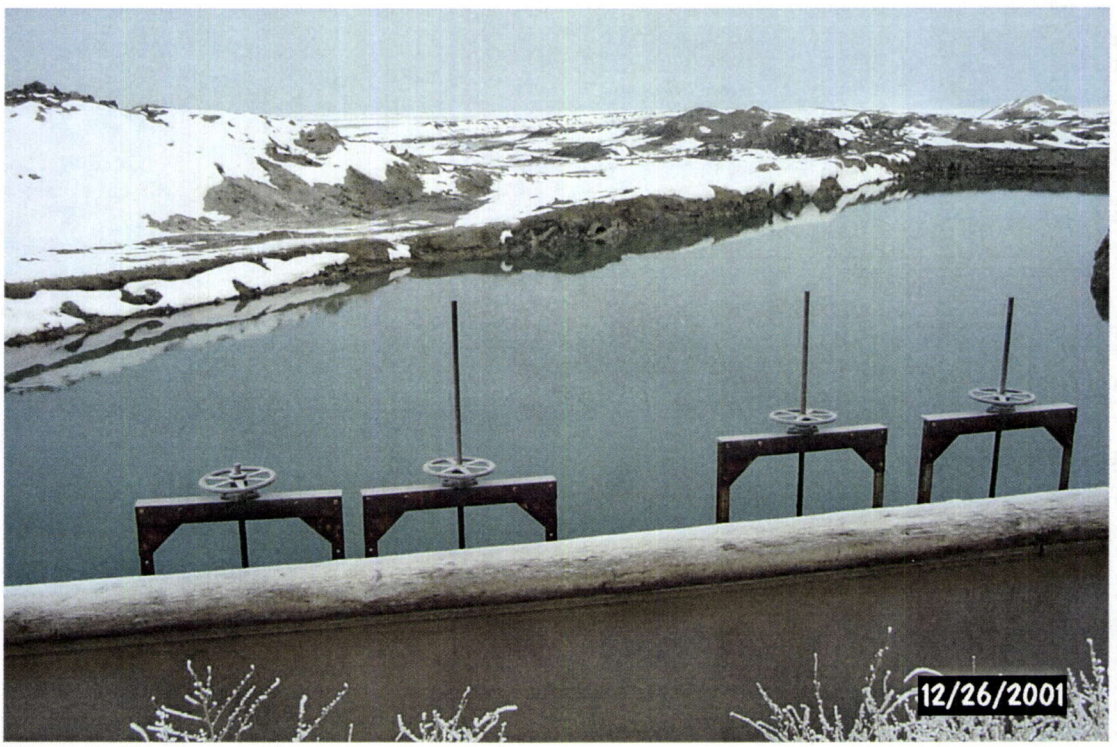

Photo 8. Headgates along the dike road.

Photo 9. Pumps along the dike road.

Photo 10. Waste storage area.